

The two adult examples from Hadramaut agree in colouring exactly with Simon's *dimidiatus*; but the three examples from Perim that I have seen differ in having the crests on the legs and palpi, and also the hands in part, blackish.

BUTHUS ANTHRACINUS, sp. n. (Pl. IX. figs. 1, 1 a.)

Colour of the upper side of the trunk and of the entire tail blackish green, like that of *Orthochirus melanurus* and *Prionurus bicolor*; legs of the 1st pair yellow, the remaining pairs with the three distal segments yellow, the rest strongly or only slightly infuscate; mandibles infuscate distally; chelæ mostly pale yellow, but slightly infuscate at the junction of the hand and digits, the crests also on the humerus and brachium sometimes rather strongly infuscate; lower surface of cephalothorax and abdomen pale or ferruginous.

Trunk rather coarsely granular above; the keels on the *carapace* not strongly defined, the anterior ones breaking up into granules long before reaching the front border; the ocular tubercle smooth; the eyes rather widely separated; the intermediate and posterior median keels forming an irregular granular crest; *carapace* a little longer than the 1st caudal segment, + half the 2nd.

Terga coarsely granular in the posterior half, nearly smooth between the keels; the three keels distinct, but short; the lateral ones not apparent upon the 1st and 2nd terga; the crests on the 7th well developed, forming almost a complete loop.

Sterna smooth, with finely denticulate posterior border; the last with four smooth conspicuous keels.

Tail about five times as long as the *carapace*, robust, but with the 1st segment wider than the 5th; all the normal keels well developed and finely granular, the inferior ones, however, on the 1st nearly smooth; the median lateral well developed on the 2nd and 3rd segments, and visible on the 4th, the intercarinal spaces granular; upper surface of tail smooth, rather strongly excavated, upper angles of 5th not sharp; *vesicle* large, globular, angled beneath the *aculeus*, coarsely punctured.

Chelæ smooth; crests on humerus granular, on brachium smooth, but well developed; none on manus, which is a little wider than the brachium; hand-back nearly two-thirds the length of the movable digit, which is furnished with about 9 median rows of teeth, the large teeth of the internal series nearly opposite the middle of the space that separates those of the external series.

Legs with granular crests on the femora, smooth on the patellæ; the posterior two feet on each side clothed below with two rows of setæ, the anterior of these rows atrophied on the anterior feet; coxæ of the legs granular, especially on the edges.

Pectines furnished with from 17–22 teeth.

Measurements in mm. of type.—Total length 36·5, of carapace 4·4, of tail 22·5; width of 1st segment 3·3, of 5th 2·9.

Loc. Hadramaut. 5 specimens collected "by the way."

This species seems to be rather variable in its characters. Those respecting colour have been already mentioned; but in addition the smallest example obtained has the interocular area of the carapace smooth, and the coxæ also almost smooth. The sculpturing of the posterior segments of the tail appears in some cases to be describable as wrinkled.

There is no doubt that this species approaches the genus *Butheolus*; and of the forms ascribed to this genus, it is to the type *thalassinus*, Sim. (Ann. Mus. Genov. xviii. p. 248), described from Aden, that the resemblance is greatest. *Butheolus thalassinus* is unknown to me; but, judging from Simon's description, it may be distinguished from *Buthus anthracinus* by having the anterior region of the carapace sloped, the ocular tubercle granular, the 5th abdominal sternum coarsely granular, the tail posteriorly dilated (compare, however, the figure, which represents the tail as posteriorly narrowed), and the vesicle small and narrow. In all these characters *thalassinus* approaches the best known form of all, the allied *Orthochirus melanurus* (Kessler) = *Schneideri* (L. Koch)*.

PARABUTHUS LIOSOMA (*Hempr. & Ehrenb.*).

Loc. Shehu, and by the way.

NEBO FLAVIPES, *Simon.*

Nebo flavipes, *Simon, Ann. Mus. Genova*, xviii. p. 249 (1883).

Loc. Hadramaut. Four specimens, collected by the way.

The largest of these Scorpions is a male measuring 123 mm.; this size is chiefly owing to the great length of the tail, which is almost six times as long as the carapace. The British Museum, however, has an example still larger than this one, namely, a

* It will probably be found that more than one species has been included under this name; but more material must be obtained before their limits can be accurately determined. Prof. Kraepelin's figure of the dentition of the chela on pl. ii. fig. 21 of his paper is quite unlike the arrangement in some of the specimens that I have examined.

specimen from the Isthmus, Aden, obtained by Mr. E. W. Oates, which measures 144 mm. in length. The specimens described by Simon from Aden were females. Dr. Jayakar has also sent us the species from Muscat.

PEDIPALPI.

PHRYNICHUS JAYAKARI, *Poc.*

Phrynichus jayakari, *Poc. Ann. & Mag. Nat. Hist.* (6) xiv. p. 294, pl. viii. fig. 3 (1894).

Loc. Hadramaut.

This species was described from two examples sent to the British Museum from Muscat by Dr. A. G. Jayakar. The specimen from the Hadramaut merely differs from the types in being a little paler-coloured, the cephalic area being blotched with ferruginous patches instead of being ferruginous all over.

Prof. Kraepelin (*Abh. nat. Ver. Hamburg*, xiii. 1895) has recently, in his characteristically sweeping manner, disposed of all the difficulties which beset the determination of the nearly allied species of this genus, by setting them all down as synonyms of each other. I would, however, warn those who work at this group, that I am not acquainted with a particle of evidence that the species named *Jayakari*, *Phipsoni*, and *pusillus* are the same. They are, on the contrary, perfectly distinct. I think, however, that it is highly possible that *Jayakari* will prove to be the same as *Deflersi* of Simon, described from Obock.

ARANEÆ (Spiders).

Only five species of this order were obtained:—

FILISTATA TESTACEA, *Latr.*

Loc. Hadramaut.

PEUCETIA ARABICA, *Simon.*

Loc. Hadramaut.

SPARASSUS WALCKENAERII, *Sav.*

Loc. Hadramaut.

SELENOPS ÆGYPTIACUS, *Sav.*

Loc. Hadramaut.

LATHRODECTUS 13-GUTTATUS, *Rossi.*

Loc. Hadramaut.

MYRIOPODA.

CHILOPODA.

Family SCOLOPENDRIDÆ.

SCOLOPENDRA TRUNCATICEPS, *Poc.*

Scolopendra truncaticeps, *Poc. Trans. Linn. Soc.*, 2nd ser. *Zool.* v. pt. 3, p. 119.

Loc. Shehu.

SCOLOPENDRA VALIDA, *Luc.*

Scolopendra valida, *Lucas in Webb & Berthelot's Hist. nat. des Iles Canaries*, ii. *Entomol.* p. 49, pl. vii. fig. 15 (1836-44); *Newport, Tr. Linn. Soc.* xix. p. 402 (1845).

In *Ann. & Mag. Nat. Hist.* May 1888, pp. 335-338, I pointed out the occurrence of *Scolopendra valida*, a Canary Island species, in Socotra and Bushire. The British Museum has subsequently received examples from S. Arabia, and I think the following subspecies may be recognized.

Subspecies DESERTICOLA, *nov.*

Head, antennæ, first tergite, and maxillipedes deep green; trunk olivaceo-castaneous, with the posterior border of the terga banded with green. Legs entirely flavous.

Loc. Shehu. A single specimen, measuring 125 mm. in length.

The Museum has received specimens of the same subspecies from Aden (*S. R. Shopland*) and Muscat (*A. G. Jayakar*). It seems to extend, therefore, over the whole of S. Arabia.

On the other side of the Persian Gulf, *i. e.* at Bushire and Jask, there appears to be another type of this Centipede, which may be called *Scolopendra valida* subspecies *persica*, *nov.*, and be diagnosed as follows:—Head and antennæ deep green; distal ends of the anal legs also deep green; terga flavous (Bushire; 3 examples, 113 mm.). Two examples from Jask, 118 mm. in length, resemble those from Bushire, but four others have the anal legs quite green and some of the anterior terga bordered with green. Specimens of this subspecies from Jask have been received from Mr. B. T. Finch and Mr. Butcher.

A third subspecies may be recognized as *S. valida* subsp. *Balfouri*, *nov.* The young are entirely pale, but in adult specimens, which may reach a length of 190 mm., the head, antennæ, and all the legs are green, or even black, and although the posterior half of the trunk is paler, the anterior half is distinctly olivaceous or olivaceo-castaneous.

The typical form from the Canary Islands appears to be of a uniform olivaceous colouring, and to offers none of the strongly contrasting patterns characteristic of the subspecies inhabiting Persia, Arabia, and Socotra. Examples of the subspecies *Balfouri* were evidently referred to by Karsch as *Collaria morsitans* (Abh. nat. Ver. Bremen, ix. p. 67, 1884).

DIPLOPODA.

SPIROSTREPTUS ARABS, sp. n.

♀. *Colour.* Legs and antennæ clear reddish yellow; head infuscate above, fading off into ferruginous below; segments deep black; the lateral portions of the 1st tergite obscurely ferruginous; the anterior half of the segments ferruginous or ochraceous.

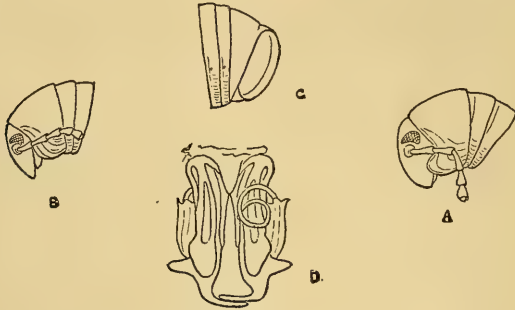
Head. Frontal region slightly sculptured, without a definite striate ridge beneath the edge of the 1st tergite; frontal sulcus deep; faint trace of a stria between the inner angles of the eyes; a small pit-like depression on the inner side of antennal socket; lower half of head strongly wrinkled, sculptured with anastomosing striæ and sulci; labral border with a deep, unidentate, angular excision. Distance between eyes about equal to their long diameter; eyes composed of about 7 transverse rows of ocelli. Antennæ extending laterally to the end of the 3rd segment; segments 2-6 gradually decreasing in length.

1st tergite minutely punctulate above, its lateral portion extending below the lower border of the 2nd; its posterior border emarginate above the posterior angle, which is rounded; the anterior border much more deeply and widely emarginate above the angle, which is convexly rounded; the lower portion of the segment covered with cristules as shown in the figure (p. 299). The rest of the terga minutely punctulate; the transverse sulcus complete on all from the 2nd backwards, lying in a shallow depression; the area in front of it closely covered with transverse cristules, which behind become stronger and more widely separated from each other; the area behind the sulcus longitudinally striate up to the pore. *Pores* minute, beginning on the 6th segment some distance behind the sulcus, which is lightly sinuate opposite to them.

Sterna quite smooth; grooves short. *Anal tergite* with a very short triangular process in the middle of its hinder border, a shallow transverse depression in front of it. *Valves* with strongly

compressed margins, their apex not covered by the caudal process; *sternum* triangular.

Legs with a double row of setæ on the lower surface of the patella, tibia, and tarsus, these spiniform on the tarsus, a single row of setæ on the other segments; coxa and trochanter hairy above at the distal end; the upper side of these two segments distinctly carinate.



Spirostreptus arabs.

A. Head of ♂. B. Head of ♀. C. Tail of ♂. D. Anterior aspect of copulatory apparatus.

Number of segments, 66. Length about 140 mm.

♂. Thinner than ♀; the lower half of the head smoother; lateral portion of the 1st tergite more strongly produced, *cf.* fig. In the anterior half of the body the patellæ and tibiæ of the legs distinctly padded distally, the pads becoming less and less distinct towards the anal end of the body. Copulatory foot as in figure.

Loc. Hadramaut. A large number of specimens.

Supplementary Note upon the Scorpions obtained in Egypt and the Soudan by Dr. JOHN ANDERSON, F.R.S.

BUTHUS EUROPÆUS (*Linn.*).

Loc. Mersa Matroo, Ramleh, Duroor.

BUTHUS QUINQUESTRIATUS (*Hempr. & Ehrenb.*).

Androctonus (*Leiurus*) *quinquestriatus* (*Hempr. & Ehrenb.*), *Verh. nat. Fr. Berlin*, i. p. 353 (1829); *iid. Symb. Phys., Scorp.* pl. i. fig. 5; and of all authors.

A large number of examples from the following localities:—Suez, Ras Gharib, Amarna, Fayum, Abbasiyeh, and Assouan.

BUTHUS LEPTOCHELYS (*Hempr. & Ehrenb.*).

Androctonus (*Leiurus*) *leptochelys*, *Hempr. & Ehrenb.*, *Verh. nat. Freunde Berlin*, i. p. 355 (1829); *Symb. Phys., Scorpiones*, no. 3.

Androctonus macrocentrus, *iid. op. cit.* p. 355; *Symb. Phys., Scorp.* pl. i. fig. 6.

Androctonus thebanus, *iid. op. cit.* p. 358; *Symb. Phys., Scorp.* pl. i. fig. 4.

Buthus arenicola, *Simon, Expl. Sci. de la Tunisie, Arachnides*, p. 51 (1885).

Loc. Duroor, 60 miles north of Suakin; S.W. Bank of Suez Canal (4 specimens).

I have compared examples of *B. arenicola* from Biskra with the Egyptian forms of *B. leptochelys*, and I feel sure that the two are identical.

BUTHUS ACUTE-CARINATUS, *Simon.*

Buthus acute-carinatus, *Simon, Ann. Mus. Genova*, xviii. p. 245, pl. viii. fig. 18 (1883); also *Thorell, Bull. Soc. Ent. Ital.* xxv. pt. 4, p. 360 (1894).

Loc. Duroor, 60 miles north of Suakin.

From this locality four ♀ specimens were obtained, the length of the largest being about 36 mm. In these the anterior edge of the carapace and the keels on the carapace and terga are infusate, as well as the anterior two-thirds of the 5th caudal segment and the inferior keels of the 4th. Moreover the crests on the legs and palpi are for the most part lightly infusate. In this particular these Duroor examples differ markedly from three ♀ specimens obtained at Thebes by Mr. Carter, which are a clear lemon-yellow throughout, the three ocular clusters being alone of a dense black. All the other examples of this species in the British Museum, namely 2 from Perim Island, 2 from Zaila in Somaliland, and 8 from Aden, agree substantially with those mentioned above from Duroor. It is worth mentioning, however, perhaps that two young examples (about 20 mm.) from Aden have the trunk and appendages rather deeply infusate, and the black ring on the anterior half of the 5th caudal segment very deep and sharply defined.

[I here subjoin the descriptions of two species of Scorpions, closely allied to *Buthus dimidiatus*, which have been recently sent to the British Museum.

BUTHUS JAYAKARI, sp. n. (Pl. IX. figs. 2, 2 a.)

Colour. Anterior half of carapace greenish black, the rest of the trunk, with the exception of the keels and granules which are blackish, pale; the first two segments of the tail pale above and below, the keels only being blackish, the 3rd segment becoming infusate, the 4th, 5th, and vesicle entirely blackish

green; legs and lower surface of the trunk quite pale, the palpi with the coxa, trochanter, and femur pale, the tibia, manus, and digits (except the tips) strongly infusate.

Carapace resembling that of *dimidiatus*, except that the interior median crests are represented by two distinct oblique rows of granules, the posterior of which is not continuous with the posterior median crest.

The *tergites* resemble those of *dimidiatus*. The tail is like that of *dimidiatus* in the development of its keels, the median lateral crest being imperceptible on the 4th and almost absent on the 3rd segment; but the tail differs very noticeably in the thickness of its anterior segments, these being normal in *Jayakari* and not so thickened as in *dimidiatus*; consequently the tail appears to be more parallel-sided. The difference in the narrowness of the 1st segment may be estimated by the fact that in *dimidiatus* its width is equal to the length of the 3rd segment, whereas in *Jayakari* it is very much less (*cf.* measurements).

Sterna like those of *dimidiatus*, the external of the four keels on the 5th being either about half the length of the internal or about two-thirds.

Chelæ like those of *dimidiatus* but more thickly hairy, and with the inferior median crest on the brachium obsolete; hand a little wider than brachium, its width less than length of hand-back, which is less than half the length of the movable digit; digits scarcely sinuate, the movable furnished with 16-17 median rows of teeth, the teeth of the internal series not far removed from the apices of the median rows behind them and lying well behind the middle of the rows that pass in front of them.

Legs hairy, crests on the femora granular, on the rest of the segments smooth; feet armed below with two parallel series of short, close-set spines, there being 5 on each row on the anterior foot and 8 on the posterior; some similar but rather larger spines, which gradually pass proximally into slender setæ, occur upon the distal tibial segment.

The pectines are furnished with 33-34 teeth and extend beyond the apex of the coxa.

In the ♂ the digits are basally lobate but still contiguous, and the hand is a trifle wider than in the ♀. The pectines, moreover, extend to the distal apex of the 4th trochanter and have 39-41 teeth.

Measurements in mm. of ♀ (type).—Total length 90, of cara-

pace 10, of tail 53; length of 1st segment 6·5, of 2nd 7·5, of 3rd 8, width of the same 6·8, 6·5, 6·2; width of brachium 3·3, of manus 4; length of hand-back 5·9, of movable digit 12·5.

Loc. Muscat (*A. G. Jayakar*).

It is interesting to note that these adult specimens more nearly resemble the young of *dimidiatus*—*i. e.*, assuming that I have correctly identified the young of that species—than they do the adults. We may conclude from this that the young of the two species will prove to be indistinguishable, which is sometimes the case with closely allied forms.

BUTHUS ALTICOLA, sp. n. (Pl. IX. fig. 3.)

♂. *Colour.* Carapace and anterior six terga blackish green; 7th tergum, tail, legs, and palpi flavous or ochraceous; digits of palpi brown with clear yellow tips (lower surface of tail perhaps partially olivaceous); mandibles infusate distally in the exposed part.

Carapace coarsely granular and keeled as in *judaicus*, but the intercarinal area behind the eyes less granular than in that species; as long as the 1st caudal segment and one quarter of the 2nd, and as long as the 4th caudal segment.

Terga coarsely granular and strongly keeled, the three keels on all the terga except the 1st strongly dentiform posteriorly; the granules on the sides of the terga subserially arranged; on the 7th tergum the two lateral crests on each side are united by a transverse row of granules, as in *judaicus*.

Sterna smooth; the external crests on the last weakly granular, anteriorly and posteriorly abbreviated, the median ones smooth, extending from the posterior border past the middle.

Tail long, slender, and low, nearly 6 times as long as the carapace, gradually narrowed posteriorly, the sides of each segment nearly straight and parallel; the 1st segment longer than wide, the 2nd, 3rd, and 4th increasing in length, the 4th twice as long as wide; 10 keels on the 1st, 2nd, and 3rd, the median lateral on the 4th represented by a few low granules; all the keels granular, the inferior median on the 1st and 2nd, however, almost smooth, the granules on the upper crests increasing in length posteriorly, the terminal granules on the upper keel of the 4th dentiform; the upper surface of segments 1-4 smooth, except for a few serially arranged granules; the area between the superior and the superior-lateral crest also serially granular, the rest of the intercarinal spaces tolerably

smooth; 5th segment with the sides of its upper surface granular, its lateral surface also finely granular, lower surface with the granules forming two intervening crests. *Vesicle* globular, wider than high, granular below; *aculeus* longish.

Palpi long, humerus as long as the carapace; brachium three times as long as wide, with the two superior crests well developed and granular, the upper crest of the posterior surface also present; manus long and wide, much wider than the brachium, smooth, punctured, its width about two-thirds the length of the hand-back, and the hand-back about two-thirds the length of the movable digit; digits separated at the base, lobate and sinuate; movable digit with 14 (15) median rows of teeth.

Legs with smooth coxæ and granularly crested femora; tarsi with two parallel rows of black spinules beneath; the distal tibial segment also with a row of spinules on its posterior side.

Pectines surpassing the 4th coxæ; with 29 teeth.

Measurements in millimetres.—Total length 81, of carapace 9, of tail 52·5; width of 1st segment 5·8, of 4th 4·5, of manus 4·8, of brachium 3; length of movable digit 12.

Loc. Chitral, Hindu Kush, 5000 ft. (*Capt. Younghusband*.)]

Genus PRIONURUS.

In his recent revision of the Scorpions of the family *Androctonidæ*, Prof. K. Kraepelin has recognized two species as composing the genus *Prionurus* (called by him *Androctonus*). These are *funestus* of Hempr. & Ehrenb., which is identical with *australis* of Linnæus, and *crassicauda* of Olivier; and on pp. 20–28 he has compiled a series of most elaborate tables of comparative measurements of the species he calls *funestus*. One cannot but admire the patience and labour displayed in this work; but to my mind the efforts that have been made to show the variability of this species are of but little value, inasmuch as they have been carried out without any regard to geographical distribution. Our author, in fact, begs the whole question, by assuming what in reality has to be proved, namely, that he is dealing with but one species. It is evident that similar tables could be prepared for every *genus*, and with the exercise of a little ingenuity the whole of the *Buthidæ* could be reduced to but one species.

Turning, however, to the facts, we find that he establishes the characters of his so-called species *funestus* upon 150 examples.

Whether these specimens all come from one locality or 150 localities, we are not informed. Probably some were from Algeria, some from Egypt, and possibly some from Syria. But we cannot learn from the treatise whether any variation in structure was noticed between the Algerian and the Egyptian forms. All the information that we get is the table of measurements, which may have been taken from a dozen species, a brief diagnosis, which also may apply to a dozen species, and the loose statement that the species extends from Marocco to Arabia. Now I venture to say, although with all respect to Prof. Kraepelin as a most able and careful worker, that this is not the method of monographing a genus that yields results of any permanent value. Every systematist should remember that naming a species is only a means to an end—the end which should always be kept in view being the discovery as to what is the relationship between a species and its environment, and the primary work of the systematist is to point out whether structural variation is correlated with differences of distribution or not. In a large majority of cases we know that there is such a correlation in terrestrial animals; and when in any case it has been definitely established, the systematist may, to assist the recollection of the fact, assign a name to the local form and call it a species, subspecies, or variety, as he pleases. And if this has been done, it is clearly the duty of a monographer carefully to examine the evidence for and against the opinion of his predecessors, and not carelessly and without comment to discard as synonyms the names that they have proposed.

Now this so-called species *Prionurus funestus* furnishes a good instance of what has been said. When Ehrenberg went to Egypt he found that on the coast near Alexandria a particular form was found: this he called *libycus*. But not being acquainted with the differences between the young and the adult, he further assigned a name to the young of *libycus*, calling it *melanophysa*. Proceeding up the Nile, he found in Upper Egypt and in Nubia another form which he at once recognized as different from *libycus*: to this he gave the name *citrinus*. Still further to the south, in Dongola, he came across another form which he looked upon as different from *citrinus*, and named *funestus*.

Later on C. Koch obtained in Algeria a form which he saw from Ehrenberg's figures was not known to occur in Egypt. To this he gave the name *hector*; but he also had another example,

apparently conspecific with *hector*, but ticketed Java*, to which he gave the name *priamus*, apparently on account of the difference of locality.

In this case then we have to deal with (1) an Algerian form *priamus* (= *hector*); (2) a Lower Egyptian form *libycus* (= *melanophysa*); (3) an Upper Egyptian and Nubian form *citrinus*; and (4) a Nubian form *funestus*. Now clearly the question that Prof. Kraepelin ought to have asked himself with regard to these so-called species is:—"Do they breed true in their own territories, or do *citrinus* parents produce indiscriminately some offspring like themselves and some presenting the characters of *priamus* and *vice versa*?" If the latter were so, then there would be justification for the view that the species are invalid. But he does not furnish us with a particle of evidence that such is the case. If even he had examined specimens from all over N. Africa and could show that, *e. g.*, the *citrinus*-form and the *priamus*-form are linked by such a fine series of gradations that it is impossible to say where one begins and the other ends, then no one would have remonstrated with him for stating that they are the same species. But we look in vain through his 'Revision' for any evidence to establish such a conclusion, and we actually cannot find out where the specimens he had under his hands came from. We are consequently compelled to accept or reject the authoritative statement that there is only one yellow species of *Prionurus* inhabiting North Africa, without being able to discover upon what evidence such a statement rests.

But the splendid material of *Prionurus* brought by Dr. John Anderson from Algeria and Egypt affords me good grounds for thinking, firstly, that *P. citrinus* is a distinct species from *P. libycus*, and secondly, that *P. libycus*, although very closely related to *P. priamus*, is not quite the same thing. I think it likely that the distinctions between the two will break down when we know more of the *Prionuri* which inhabit the countries lying between Algeria on the west and Egypt on the east. But provisionally they may be regarded as subspecies of *australis* of Linnæus, although what *australis* of Linnæus may be, in the strictest sense of the word, is more than I can tell. Thorell, who has seen the type of *australis*, says that it is specifically identical

* This is of course not the correct locality. If we are to trust C. Koch's works, Java is a much favoured island so far as Scorpions are concerned, having, in addition to its own population, aliens from most of the other quarters of the globe.

with *funestus*, but I am not aware that he ever compared the type or even a toptype of *funestus* with *australis*, and since he is of opinion, with Kraepelin, that *citrinus* and *libycus* are co-specific, his statement about the identity between *australis* and *funestus* must be taken *cum grano salis*.

PRIONURUS LIBYCUS, *Hempr. & Ehrenb.*

Prionurus libycus, *Hempr. & Ehrenb. Verh. nat. Fr. Berlin*, i. p. 357 (1829); *iid. Symb. Phys., Zool., Scorpiones*, no. 8, pl. ii. fig. 1.

Prionurus melanophysa, *iid. ibid.* no. 11, pl. ii. fig. 8 (young).

Ehrenberg gives as the locality for this form "on the Libyan shore between Alexandria and Siwa, and the mountains of Sinai." Dr. Anderson sent home a long series of forms from Mersa Matroo, 150 miles west of Alexandria, also examples from the Pyramids and Abbasiyeh. Amongst those from Mersa Matroo are examples of all ages and both sexes, ranging in length from about 25 to 95 mm. But in addition to those obtained by Dr. Anderson, the British Museum has others ticketed Egypt, making in all a total of 28 specimens.

In the young the whole animal is flavous, with the exception of the poison-vesicle, the 5th segment of the tail, and the lower part of the 4th segment, which are a deep blackish green. With growth their blackness gradually fades away; but it never appears to die out altogether, and in some apparently adult examples it is still very manifest. The hands of the chelæ are at all ages perfectly clear yellow, a character which forms one of the best features for distinguishing this subspecies from the Algerian, to which Koch has given the two names *priamus* and *hector*, and in which the hands (and fingers in part) in the young, and even in many large examples, are deep blackish green.

Of this Algerian form *priamus* the British Museum has 37 examples from the following localities in Algeria and Tunisia, namely, Algiers, Duirat, Tuggurt, Biskra, and Tunis. Most of these are adult or half-grown specimens, but amongst the series of 12 from Biskra are examples ranging from 22 to 102 mm.

PRIONURUS CITRINUS, *Hempr. & Ehrenb.*

Prionurus citrinus, *Hempr. & Ehrenb. Verh. nat. Freunde Berlin*, i. p. 356 (1829); *iid. Symb. Phys., Scorpiones*, no. 6, pl. ii. fig. 2.

Of this form Ehrenberg says "not uncommon in Upper Egypt and Dongola." Dr. Anderson has brought back specimens from the following localities:—Cairo, Amarna, S.W. Bank of the Suez Canal, Fayum, Assouan (1st cataract), and Wadi-Halfa (2nd

cataract). A single specimen was obtained at each of the five first-mentioned places, and 17 at the last. This long series from one spot is peculiarly interesting, inasmuch as it clearly shows the characters of the species at all stages.

The largest example that I have seen is a ♀ from Assouan measuring 94 mm. The smallest specimen, from the S.W. Bank of the Suez Canal, measures 27 mm., and the largest (♂) about 83. The species is entirely pale yellow at all ages, thus differing from the two forms mentioned above as *libycus* and *priamus*. The tail in young forms is quite like that of the genus *Buthus*, the upper surface of the 5th segment being flat and the angles squared, though granular. This is even the case in specimens of about 60 mm. in length. Moreover, even in examples of this size the tail is narrowed from base to apex, the 1st segment being slightly wider than the 3rd.

In adult examples of both sexes the 3rd segment is slightly wider than the 1st, the 1st and the 4th being about equal in width, and the 5th distinctly narrower than the 1st. The superior caudal crests are elevated, but the strong elevation so characteristic of *libycus* and *hector* is noticeably absent. Consequently the posterior segments of the tail are very narrow and low as compared with those of *libycus* and *hector*. Lastly *citrinus* may be also recognized from the two last-named by its very much straighter aculeus. The young again differs from the young of *libycus* in having the digits of the chelæ shorter and much straighter. In this character as well as in the thinness of its tail these young examples offer a striking resemblance to adults of *Buthus leptochelys*.

PRIONURUS BICOLOR, Hempr. & Ehrenb.

Prionurus bicolor, Hempr. & Ehrenb. *Verh. nat. Freunde Berlin*, i. p. 358 (1829); *üid. Symb. Phys., Scorpiones*, no. 9, pl. ii, fig. 4.

Specimens were brought from the following localities: Cairo, Ramleh, Manadra, Aboukir, and Mersa Matroo (150 miles W. of Alexandria); but the species is evidently not so common in Egypt as the "yellow" Scorpions.

All systematists of late years who have worked at Scorpions (including more especially Simon, Thorell, and Kraepelin) have identified this Egyptian species as *crassicauda* of Olivier, with the name *bicolor* as a synonym. But all the evidence upon which I can lay my hands shows that *crassicauda* of Olivier is quite a different species, which does not occur in Egypt at all. It is true that Olivier

stated he had seen it in Egypt; but such a statement is, I think, not of much value. The Scorpion that Olivier described as *crassicauda* he mentioned expressly in connection with Cachan (Kashan, between Ispahan and Teheran, below the 40th parallel), and the figure that he gives is presumably taken from a specimen from this locality. Moreover he affirms that in addition to Persia the species is met with in Baghdad and Mesopotamia (and Egypt). His description is brief but concise and to the point. It may be epitomised as follows:—length 3 inches; colour brown, with legs and chelæ sometimes yellow; 26 pectinal teeth; 2nd, 3rd, and 4th caudal segments with only 8 crests*. The figure that he publishes is also fairly good, and amongst other things it shows that the manus is of the thickish type with the digits short.

In the British Museum collection there are specimens ticketed Persia, Bushire, Persian Gulf, Baghdad, and Midian, which are indisputably identical with Olivier's *crassicauda*. The largest example, a ♀ from Midian, measures 83 mm., which is just over 3 (French) inches, and the smallest, from the same locality, is about 45 mm. In the adults of both sexes, as in *citrinus*, *libycus*, and *priamus*, the manus is thicker than the forearm; the colour is a chocolate-brown, sometimes blackish, the tips of the legs and of the digits being paler. As stated by Olivier, the median lateral crest on the tail is complete only on the 1st segment, being represented by 2 or 3 granules on the 2nd. I have counted as many as 31 pectinal teeth on a ♂ from the Persian Gulf, and as few as 25 on a ♀ from Bushire.

This species and *bicolor* may be recognized as follows:—

PRIONURUS CRASSICAUDA (Oliv.).	PRIONURUS BICOLOR, Hempr. & Ehrenb.
Median lateral crest on 2nd and 3rd caudal segments represented merely by a posterior row of 3 or 4 granules.	Median lateral crest on 2nd and 3rd caudal segments well-developed and extending right past the middle of the segment.
The intercarinal space on the sides and lower surface of the tail not so closely and finely granular, at most sparsely so.	The intercarinal spaces on the sides and lower surface of the tail shagreened with fine granulation.
Tail much narrower, <i>e. g.</i> 3rd segment only a little wider than long; aculeus shorter.	Tail much stouter, the width of the 3rd segment much greater than its length; aculeus longer.

* Voyage dans l'Empire Othoman, etc. v. p. 172 etc., (esp. in note), pl. 42. fig. 2 (1807), 8vo.

In the adult ♂ and ♀ the manus is wide, wider than the brachium.	In the adult ♂ and ♀ the manus is narrow, not wider than the brachium.*
Pectinal teeth in ♂ up to 34, in ♀ down to 25.	Pectinal teeth in ♂ 25-27, in ♀ 19-20 (23).
Loc. Mesopotamia and Persia.	Loc. Egypt.

This brief diagnosis of *P. crassicauda*, Oliv., shows that the species is very nearly allied to those that Kraepelin has diagnosed under the name *funestus*. Mons. Simon was I believe the first to attempt to define the differences between the dark coloured species of *Prionurus*. He recognized two forms, namely, *crassicauda* (Oliv.) from Persia and Syria, and *æneas* of C. Koch from Algeria; but he was wrong in supposing *bicolor* of Hemprich and Ehrenberg to be the same as *crassicauda* of Oliv. I suspect that the Algerian form to which C. Koch gave the name *æneas* may prove to be distinguishable from both the Egyptian and the Persian species; but I have not seen a large enough series of specimens from that country to be able to speak with any certainty on the point.

Genus PARABUTHUS, Poc.

What I have said above respecting Prof. Kraepelin's revision of *Prionurus* applies perhaps with even greater truth to his discussion of the genus *Parabuthus* (*Heterobuthus*). He admitted only two species of this genus—one named *liosoma*, Hempr. & Ehrenb., and the other *brevimanus*, Thorell. But he certainly mixed up several valid species under *liosoma*. The following, for instance, cannot possibly be confounded with it:—*P. villosus*, Peters, from Hereroland, Congo; *P. fulvipes*, Simon, from S.W. Africa; and *P. planicauda*, Poc., from Cape Colony. I suspect that the last-named species will be found to have the following synonymy: *P. capensis*, Hempr. & Ehrenb., = *P. iros*, C. Koch, = *P. segnis*, Thorell, = *P. planicauda*. But whatever its name and synonymy may be, there certainly is in Cape Colony a common species, of which the Museum has now about 50 specimens, which is perfectly distinct from *P. liosoma*.

PARABUTHUS HUNTERI, sp. n.

I venture to propose a new name for a form occurring on the west coast of the Red Sea, and nearly allied to the typical Arabian *liosoma*.

* It is highly improbable that all the Egyptian examples which have been described and figured are immature.

The colour of the legs, palpi with the exception of the palely infuscate digits, and first three segments of the tail is a very clear pale yellow; the anterior six abdominal terga, with the exception of their lateral portions, and usually the ante-ocular area of the carapace are darker; while the 4th and 5th segments of the tail and the vesicle are a deep greenish black or brown. The dark colour on the vesicle appears at a very early age, specimens only 30 mm. long showing it very clearly; whereas in the typical *liosoma* the vesicle remains for a long while perfectly pale. This is noticeable in specimens of about 70 mm. in length; and is well shown in Ehrenberg's figure of his type, which came from Gumfuda in Arabia. *P. Hunteri* may be further recognized by its much more slender tail. This difference, which at once strikes the eye, may be easily shown by the following measurements, taken from a ♂ example of *P. liosoma* from Aden (*S. R. Shopland*), and a ♂ of *P. Hunteri* from Duroor, 60 miles north of Suakin. These examples have the carapace of the same length, *i. e.* 10 mm.

♂ *liosoma*.—Total length 95 mm., carapace 10, tail 60; length of 1st segment 7·5, width 7·8; length of 2nd 8·8, width 8·3; length of 3rd 9, width 8·6; length of 4th 10·5, width 8·8; length of 5th 11, width 7. Width of brachium 3·4, of manus 4·5; length of hand-back 6·2, of movable digit 9·3.

♂ *Pentonii*.—Total length 100 mm., carapace 10, tail 66; length of 1st segment 8·6, width 7·5; length and width of the rest as follows: of 2nd 9·8, 7·8; of 3rd 10, 8; of 4th 11·3, 7·6; of 5th 12·5, 7. Width of brachium 3·4, of manus 5; length of hand-back 6·5, of movable digit 9·3.

Corresponding differences obtain in female examples; and although subject to a certain amount of individual variation, they appear nevertheless to be constant on the whole.

A further distinction that may be noticed in the male is the presence in *P. Hunteri* of a tubercle lying at the base of each digit of the chela; that on the immovable one is of considerable size, that on the movable is much smaller and closer behind the other. These tubercles are not present upon any of the males of the typical *liosoma* that I have seen, even upon the largest, and presumably therefore the oldest.

The largest male of *Hunteri* that I have seen is 113 mm. long.

Loc. Duroor, 60 miles N. of Suakin (36 specimens); Suakin (2 specimens obtained by Surgeon-Captain Penton).

I dedicate this species to Colonel Hunter, lately Governor of the Red Sea Littoral.

[I subjoin descriptions of two new species of *Parabuthus* allied to *liosoma*.

PARABUTHUS GRANIMANUS, sp. n. (Pl. IX. figs. 4-4d.)

? *Buthus villosus*, Simon, *Ann. Soc. Ent. France*, 1890, p. 130; not of Peters.

♀. *Colour* of trunk and palpi reddish or blackish brown; tail with segments 1 to 3 clear yellowish brown, segments 4-5 and the vesicle piceous, the 5th segment of the tail rather paler beneath than the 4th; mandibles, legs, and sternal surface of the trunk clear ochre-yellow, the femora of the legs sometimes a little darker than the rest of the segments.

Trunk as in *P. liosoma*; carapace granular throughout, except for a smooth area on each side of the tubercle.

Tail almost six times the length of the carapace, nearly parallel-sided; segments 1 and 4 equal in width, 2 and 3 very slightly wider than the 4th, the segments all low, as in *liosoma*, the 4th a little lower than the first; all long and narrow, with sides lightly convex, much longer as compared with their width than in *liosoma*, all much longer than wide, the width of the 4th a little less than the length of the 1st and much less than the length of the 3rd (in *liosoma* the width of the 4th is much greater than the length of the 1st and equal to that of the 3rd); the vesicle large, its width equal to the width of the lower surface of the 5th segment between the keels (*cf.* measurements).

Palpi more coarsely granular than in *liosoma*; the manus, instead of being smooth as in *liosoma*, is covered thickly with squamiform granules; moreover, it is wider than in *liosoma*, being slightly wider than the brachium, which is coarsely granular all over.

The first abdominal sternum beneath the pectines perfectly smooth (finely granular anteriorly and laterally in *liosoma*).

♂. Differing from the ♂ of *liosoma* in exactly the same features as the ♀; the manus considerably wider, with the digits lobate as in *P. Hunteri*.

Measurements in millimetres.—♂. Total length 96, length of carapace 9·8, of tail 62; length and width of the segments—1st 8, 7; 2nd 9, 7·3; 3rd 9·5, 7·3; 4th 11, 7; 5th 11·5, 6·5; width of vesicle 5; width of brachium 3·3, of hand 5·2; length of hand-back 7·3, of movable digit 8·7.

♀. Total length 110, of carapace 12·5, of tail 72; length and width of the segments—1st 9·2, 8·2; 2nd 10·4, 8·8; 3rd 10·6, 8·8;

4th 12·5, 8·5; 5th 13·5, 7·8; width of vesicle 7; width of brachium 4, of hand 4·2; length of hand-back 5·6, of movable digit 12.

The measurements of the ♂ may be compared with those of the ♂ of *liosoma* and *Hunteri* given above. From this it is apparent that in having the tail long and slender *granimanus* and *Hunteri* are much alike, but that the manus is larger even than in *Hunteri* and is, in addition, covered with granules.

The measurements of the ♀ may be compared with the following taken from a ♀ of the typical *liosoma* from the crater at Aden. Total length 118, of carapace 12·5, of tail 70; length and breadth of its segments: 1st 9, 9·3; 2nd 10, 10; 3rd 10·5, 10·2; 4th 11·8, 10·3; 5th 13, 8·8; width of vesicle 7, of brachium 4, of manus 3·8; length of hand-back 5·5, of movable digit 12·7.

This shows clearly that the tail in *liosoma* is much thicker and shorter. Of the latter the Museum has 59 specimens from S. Arabia.

Loc. Zeyla in Somali-land. 5 specimens, including types of ♂ and ♀, obtained by Mr. E. W. Oates. Also two examples of apparently the same form, but paler, from the Somali coast presented to the British Museum by H. M. Phipson: the larger of these is a ♀ measuring 120 mm., the carapace being just over 12 and the tail 75. And two others (♂ ♀) from the crater at Aden, the ♀ measuring 128 mm., of which the tail is 79 and the carapace 13·2. These two examples are of peculiar interest, because from the fact that they were taken in company with a large number of examples of the typical *liosoma*, it appears that the two remain perfectly distinct in the same spot, and exist side by side without blending.

The Museum also has a ♀ example of apparently this form from Massowah, and another nearly allied form from Kilimanjaro and Mianzine obtained by Mr. F. J. Jackson. But more material is required from these latter localities before we can be sure of the identity of the two specimens.

PARABUTHUS PALLIDUS, sp. n.

Colour. Legs, mandibles, palpi, tail, and lower side of trunk entirely pale yellow; carapace and terga darker, reddish or brownish yellow.

Carapace as long as tail-segments 1st + $\frac{1}{3}$ of the second, entirely covered, including the ocular tubercle and the area immediately below the median eyes, with fine granules.

Terga also covered with granules, which are exceedingly fine

in the front half of each, but rather coarse in the posterior half; the median crest small, extending from the 2nd to the 6th. *Sterna* smooth; the last at most finely shagreened, with the 4 keels very weak.

Tail about $5\frac{1}{2}$ times the length of the carapace, gradually expanding to the middle of the 4th segment; the upper surface of the segments 1 and 2 hollowed and mesially grooved; upper surface of segments 3-5 smooth, polished; segments 1-3 with 10 keels, all of which are coarsely granular, except the two inferior keels on the 1st, the same two keels on the 2nd and 3rd composed posteriorly of dentiform tubercles; the inferior lateral keels on segments 1-3 strongly converging behind; the superior keels on segments 1-4 evenly granular; the lateral and inferior intercarinal spaces granular, except those on the lower surface of the 1st, the granulation becoming thicker on the posterior segments; on segment 4 the lower surface is completely and closely granular, the two inferior keels obsolete, visible only in the anterior third of the segment; the 5th segment completely granular at the sides and below, the superior keels without any enlarged granules or tubercles, and with scarcely a trace of any enlarged serially arranged granules on the lower surface between the median and the lateral keels; the granules on the lateral keels becoming tubercular behind, the 3rd from the end abruptly enlarged and quadrate; the lobe on each side of the anus large and squared, and not secondarily lobate. 1st segment wider than long*, 2nd as long as wide, 3rd a little longer than wide, 4th and 5th longer than wide; length of 3rd a shade less than width of the 4th, the height of the 4th equal to the length of the 1st, the height of the 3rd and 2nd only a little less, height of the 4th about $\frac{2}{3}$ the length of the 5th.

Vesicle coarsely granular below, considerably wider than high.

Palpi short; humerus granular and crested above; brachium smooth and punctured behind, coriaceous above, granular in front; manus entirely smooth and punctured, narrower than the brachium; the length of the hand-back about half the length of the movable digit, and about $\frac{1}{3}$ longer than the width of the hand; digits short, not lobate, only slightly curved, with 10 median rows of teeth, and 11 teeth forming the inner series.

Legs with femora and patellæ of 3rd and 4th granular, for the rest smooth.

* Length is taken laterally from the posterior border to the large tubercle which marks the point of origin of the two upper keels.

Pectines projecting beyond the apex of the 4th coxæ, furnished with 29–30 teeth ; the basal lobe large and long.

Measurements in millimetres.—Total length 66, of carapace 7·5, of tail 41 ; width of 1st segment 5·5, of 4th 6·3, length of latter 7, height 5 ; length of 5th 7·6, height 4, width 5·5 ; length of manus and digits 10·5, of movable digit 6·6.

Loc. Mombasa (2 specimens).

This species differs markedly from *liosoma* and its allies in the uniform colouring of the tail, as well as in having the segments of this organ much more elevated.]

NANOBUETHUS, gen. nov.

Movable jaw of mandible armed below with one small tooth behind the terminal fang ; immovable jaw unarmed below.

Digits of the chelæ with their proximal third unarmed ; the distal portion armed with only 5 median rows of minute denticles accompanied by short oblique rows, each composed of 3 (2) exceptionally strong sharp conical teeth, the apex of the digits being occupied by 6 of these large teeth.

Genital operculum very large and long, each half about twice as long as wide, with strongly convex posterior border and emarginate external border, more than twice as long as the triangular deeply impressed sternum.

NANOBUETHUS ANDERSONI, n. sp.

Colour. Trunk infuscate above, the posterior and lateral borders of the terga ferruginous ; palpi, legs, and tail pale yellow, the latter organ very slightly infuscate at its base ; its 5th segment also lightly infuscate below ; the lower surface of the trunk pale olivaceous ; pectines yellow.

Carapace about as long as the 1st caudal segment and half the 2nd, granular throughout ; median eyes widely separated ; keels almost entirely obsolete, the anterior and posterior median alone represented by a few larger more polished granules. *Terga* granular throughout ; the lateral keels very weak ; the two lateral keels on the 7th also very weak. *Sterna* smooth, the last weakly granular posteriorly ; the 4 keels, especially the external ones, very poorly developed.

Tail narrowed behind, about $5\frac{1}{2}$ times the length of the carapace ; the superior keels weak on the 1st segment and practically absent on the rest, the upper edges being evenly rounded ; the upper surface excavated on the 1st, 2nd, and 3rd, the 4th and

5th less noticeably excavated; the lateral keels weak, the median lateral visible on the 2nd and on the hinder half of the 3rd; the 4 inferior keels normally strong on 1st segment, much stronger on the 2nd and 3rd, the median invisible on the 4th, which is simply granular below; the inferior and lateral intercarinal spaces of the segments 1-4 granular; 5th segment coarsely granular below the lateral keels, posteriorly strongly lobate or bluntly dentate, the edge on each side of the anus produced and lobate, as in *europæus*. *Vesicle* moderately large, angled beneath the aculeus, which is as long as the vesicle and lightly curved.

Palpi weak; humerus and femur granular and carinate; brachium and manus smooth and not carinate, but coarsely punctured; manus small, narrower than brachium; digits short, the movable less than twice the length of the hand-back, not lobate; manus and digits together only a little longer than the carapace.

Legs granularly crested; feet with two series of setæ below.

Pectines with 16-17 teeth.

Measurements in millimetres.—Total length 28, of carapace 3·5, of tail 17, width of 1st segment 2·3, of 5th 1·8.

Loc. Duroor, 60 miles north of Suakin.

EXPLANATION OF PLATE IX.

Fig. 1. *Buthus anthracinus*, sp. n., nat. size.

1 a. " " Lateral view of tail.

2. " *Jayakari*, sp. n., nat. size. ♀.

2 a. " " Extremity of tail.

3. " *alticola*, sp. n. Extremity of tail.

4, 4 a. *Parabuthus granimanus*, sp. n. Upper and lateral views of tail of ♀ specimen from Zeyla, in which the carapace measures 12·5 mm. (nat. size). To compare with figs. 5 & 5 a.

4 b. *Parabuthus granimanus*. Hand and arm (nat. size). ♀.

4 c, 4 d. " " Arm and hand of ♂ specimen in which the carapace measures 9·8 mm. ($\times 2$), to show the basal lobes and granulation (compare with fig. 5c).

5, 5 a. *Parabuthus liosoma* (Hempr. & Ehrenb.). Upper and lateral views of tail of ♀ specimen from Aden, in which the carapace measures 11·5 mm. In fig. 5 the fourth and fifth segments are a shade too thick; but the figure shows very clearly the form of the tail which is typical of *P. liosoma* (s. s.), and differs strongly from that of *P. granimanus*.

5 b. *Parabuthus liosoma*. Hand and arm (nat. size) of same specimen to compare with fig. 4b.

5 c, 5 d. *Parabuthus liosoma*. Arm and hand of ♂ specimen of which the carapace measures 10 mm. ($\times 2$), to show smoothness and absence of lobes on fingers.

PLATE IX. (*continued*).

Figs. 6 a, 6 b. *Parabuthus villosus* (Peters). Upper and lateral views of tail of ♀ example from Benguela (W. Africa), in which the carapace measures 12 mm.—These figures are inserted to convince those authors, who persist in citing *villosus* as a synonym of *liosoma*, that the two are perfectly distinct. Compare the large vesicle, stout and curiously curved aculeus, the elevated 5th segment, and the straighter, more parallel-sided, more thickly hairy tail.

ADDENDUM.

*List of the Scorpions obtained by Colonel Yerbury at Aden
in the Spring of 1895.*

1. *Hemiscorpius lepturus*, Pet. Aden (many specimens).
2. *Nebo flavipes*, Sim. Aden, Haithalhim, Shaikh Othman.
3. *Parabuthus liosoma* (Hempr. & Ehrenb.). Aden, Haithalhim, Lahej, Shaikh Othman.
4. *Buthus dimidiatus*, Sim. Aden, Lahej, Shaikh Othman.
5. *Buthus acute-carinatus*, Sim. Aden, Lahej, Haithalhim.
6. *Butheolus thalassinus*, Sim. Aden, Lahej, Haithalhim, Shaikh Othman.

This little collection came to hand whilst this paper was passing through the press. The most interesting species of the lot are the first and last of the list. *Hemiscorpius lepturus* seems to be represented by very few specimens in the collections of Europe. Up to the present time, so far as I am aware, the British Museum and the Museum at Berlin are the only institutions which possess it. The British Museum received it for the first time some two years ago, when Mr. Oates sent home one specimen from Aden. Yet, judging from Col. Yerbury's collection, the species is not uncommon in Aden; and it evidently has a wide range, since it extends at least as far to the north as Baghdad. *Butheolus thalassinus* is new to the British Museum; and the acquisition of seven specimens has filled up an important gap in our series of Scorpions. Moreover, it has enabled me to compare the species both with *Buthus Benti* and with *Nanobuthus Andersoni*. The latter differs from *Butheolus* in having the anteoocular area of the carapace almost horizontal, the lower border of the immovable mandibular digit unarmed, in the partial degeneration, both in number and size, of the median rows of teeth on the digits of the chelæ and the corresponding increase in strength of the lateral teeth. According to Simon's description of *B. thalassinus*, the tail is posteriorly dilated, and there is only one inferior tooth on the immovable mandibular digit. The 3rd and 4th segments of the tail, however, are scarcely wider than the 1st, and sometimes at least there are two teeth in the position mentioned above. In both these respects the species approaches *B. Benti*; but the two are undoubtedly specifically distinct.

5th less noticeably excavated; the lateral keels weak, the median lateral visible on the 2nd and on the hinder half of the 3rd; the 4 inferior keels normally strong on 1st segment, much stronger on the 2nd and 3rd, the median invisible on the 4th, which is simply granular below; the inferior and lateral intercarinal spaces of the segments 1-4 granular; 5th segment coarsely granular below the lateral keels, posteriorly strongly lobate or bluntly dentate, the edge on each side of the anus produced and lobate, as in *europæus*. *Vesicle* moderately large, angled beneath the aculeus, which is as long as the vesicle and lightly curved.

Palpi weak; humerus and femur granular and carinate; brachium and manus smooth and not carinate, but coarsely punctured; manus small, narrower than brachium; digits short, the movable less than twice the length of the hand-back, not lobate; manus and digits together only a little longer than the carapace.

Legs granularly crested; feet with two series of setæ below.

Pectines with 16-17 teeth.

Measurements in millimetres.—Total length 28, of carapace 3·5, of tail 17, width of 1st segment 2·3, of 5th 1·8.

Loc. Duroor, 60 miles north of Suakin.

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5 b. *Parabuthus liosoma*. Hand and arm (nat. size) of same specimen to compare with fig. 4b.

5 c, 5 d. *Parabuthus liosoma*. Arm and hand of ♂ specimen of which the carapace measures 10 mm. (× 2), to show smoothness and absence of lobes on fingers.

PLATE IX. (*continued*).

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5. *Buthus acute-carinatus*, Sim. Aden, Lahej, Haithalhim.
6. *Butheolus thalassinus*, Sim. Aden, Lahej, Haithalhim, Shaikh Othman.

This little collection came to hand whilst this paper was passing through the press. The most interesting species of the lot are the first and last of the list—*Hemiscorpius lepturus* seems to be represented by very few specimens in the collections of Europe. Up to the present time, so far as I am aware, the British Museum and the Museum at Berlin are the only institutions which possess it. The British Museum received it for the first time some two years ago, when Mr. Oates sent home one specimen from Aden. Yet, judging from Col. Yerbury's collection, the species is not uncommon in Aden; and it evidently has a wide range, since it extends at least as far to the north as Baghdad. *Butheolus thalassinus* is new to the British Museum; and the acquisition of seven specimens has filled up an important gap in our series of Scorpions. Moreover, it has enabled me to compare the species both with *Buthus Benti* and with *Nanobuthus Andersoni*. The latter differs from *Butheolus* in having the anteoocular area of the carapace almost horizontal, the lower border of the immovable mandibular digit unarmed, in the partial degeneration, both in number and size, of the median rows of teeth on the digits of the chelæ and the corresponding increase in strength of the lateral teeth. According to Simon's description of *B. thalassinus*, the tail is posteriorly dilated, and there is only one inferior tooth on the immovable mandibular digit. The 3rd and 4th segments of the tail, however, are scarcely wider than the 1st, and sometimes at least there are two teeth in the position mentioned above. In both these respects the species approaches *B. Benti*; but the two are undoubtedly specifically distinct.

